Hibernation

Bats are animals that are distinctly warm-loving, or thermophilic, which is why they have taken to life in the tropics. Out of 18 species of bats, only 2 live in a temperate climate. These are vespertilionid and rhinolophid bats, which are capable of full hibernation. Individual specimens decide on their body temperature. They are characterized by the greatest variability in body temperature. They can enter a state of reduced activity every day for several hours or longer regardless of the season. These states are called torpor and estivation. Bats can lower their body temperature much faster than mammals of similar size and raise it much faster as well.

The most critical period in the life of bats is winter because the insects they mainly feed on are inactive. This is when bats go into hibernation to survive the difficult time. They lower their body temperature by about 30 degrees. Life processes then slow down, and animals can survive by using the subcutaneous fat reserves they have accumulated, feeding very intensively in autumn. Winter shelters for bats are most often caves, adits, basements, shelters, wells, and even cracks in buildings. Some species hibernate in tree hollows, and a few of them migrate to warmer regions of Europe to survive the winter period.

Hibernating bats wake up periodically to take care of physiological needs, drink water, or change their place of stay. Interestingly, such awakenings consume about 90% of the accumulated fat because raising body temperature to the normal activity temperature requires a considerable amount of energy.

Extra awakenings caused by external factors (sudden changes in air temperature, noise, touch, light) are extremely dangerous for bats because they can deplete fat reserves and lead to starvation.

Most bat species lead a colony life, so-called social thermoregulation is possible, which involves mutual warming during sleep when individual specimens press their bodies together.

Other ways of obtaining thermal energy at low cost include:

* Seeking sun-warmed attics,
* Occupying warm chimneys,
* Occupying the highest places in hiding spots.